Chapter XIV

Intellectual Capital in Knowledge–Intensive Firms: Exploring the Concept and Main Components in Boston’s Route 128

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ABSTRACT

During more than a decade, the literature has provided several intellectual capital models. Nevertheless, empirical evidence is still necessary in the field, and empirically supported models for classification and measurement of intellectual capital are not very common. This work finds the main components or building blocks of an intellectual capital balance sheet, taking the three most common components of intellectual capital (human capital, structural capital, and relational capital) and testing empirically if this grouping of intangible assets is supported by the evidence obtained from a sample of knowledge-intensive firms from Boston’s Route 128. Findings suggest a classification of intellectual capital according to four categories: human capital, structural capital, relational business capital, and strategic alliances.

INTRODUCTION

More than a decade has passed since the publication of the first proposals about the concept and measurement of intellectual capital. Until now, literature has provided several intellectual capital models (Brooking, 1996; Bueno, 1998; CIC, 2003; Edvinsson & Malone, 1997; Kaplan & Norton, 1996; among others). Nevertheless, the need for adapting theoretical and empirical models to the new social and economic trends justifies an effort in improving previous proposals. Empirical
evidence is still necessary, and empirically supported models for classification and measurement of intellectual capital are not very common.

At the international level it is accepted that there are three basic components of intellectual capital: human capital, structural capital, and relational capital. In a wide sense, these represent all expressions of firm’s knowledge stocks. This triple nature of intellectual assets is being revisited by different lines of research, which are trying to reconcile the concept of intellectual capital (CIC, 2003).

In this chapter, an empirical research about knowledge-intensive firms is presented, based on the dominant stream of the theoretical proposals of intellectual capital, thus adopting these basic three components:

- **Human capital**, which includes values and attitudes, aptitudes and know-how
- **Structural capital**, which contains both organizational and technological elements that pursue integration and coordination within the firm
- **Relational capital**, which gathers the value of the relationships that the firm maintains with external agents (close to business activity or with other more distant social agents).

The purpose of this empirical research is to test the previously extant models, and provide a configurative definition of intellectual capital from the different components that it comprises.

**BACKGROUND:
MAIN COMPONENTS OF INTELLECTUAL CAPITAL AND COMPETITIVE ADVANTAGE**

Although for a long time it has been recognized that economic wealth comes from knowledge assets—intellectual capital—and its useful application (Teece, 1998), the emphasis on it is relatively new. Managing the intellectual capital of the firm has become one of the main tasks in the executive agenda. Nevertheless, this work is especially difficult because of the problems involved in its identification, measurement and strategic assessment. In this situation, the models of intellectual capital become highly relevant, because they not only allow one to understand the nature of these assets, but also to carry out their measurement.

The term intellectual capital is used as a synonym for intangible or knowledge assets since the work by Stewart (1991). The fact of calling it “capital” makes reference to its economic roots, because it was described in 1969 by the economist Galbraith as a process of value creation and as a bundle of assets at the same time. The definition by Bueno-Campos (1998, p. 221), “basic competencies of intangible character that allow to create and maintain competitive advantage,” argues how we can tie intellectual capital to the resource-based view (RBV).

A joint perspective for intellectual capital (understood as strategic resources and capabilities) led to us to raise its assessment in order to state its own consistency. The different types of intellectual capital represent different types of intangible resources and capabilities. Nevertheless, in spite of their strategic nature, all of these assets would not have the same value for the firm, as it seems to suggest in the works of Hall (1992, 1993), Itami and Roehl (1987), Aaker (1989), or Prahalad & Hamel (1990) that emphasize the importance of certain intangibles. Setting this kind of difference can be considered as a useful help for strategic management. They can help in making decisions about the actions that the firm must perform and about the implementation of programs that allow it to protect, maintain or develop those more valuable intangible assets. Nevertheless, in order to explore the relation between any specific kind of intellectual asset and competitive advantage, a clear identification of the main components of intellectual capital is required.